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ABSTRACT

Previous research has shown a statistically significant correlation between life change stress and physical illness. To examine the relationship between locus of control and the rating of life events and to examine the relationship between responsiveness to threat and ratings, a sample of 274 college students answered a series of four questionnaires, including the college-modified Social Readjustment Rating Questionnaire, the Rotter Internal-External Scale, the Byrne Repression-Sensitization Scale, and the Learning Strategies Questionnaire. Results indicated that perception of an event, as influenced in some events by locus of control, influenced the response to the event to a certain extent. In addition, though, it was likely that locus of control may have influenced the response of an individual to certain events, the ratings of which showed no influence from locus of control. The relationship between event-ratings and the response-to-threat construct of repression-sensitization was only partially upheld. The findings confirm the existence of systematic differences in individual perception and rating of life change events. (JAC)

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PERSONALITY FACTORS AND STRESS RATINGS OF LIFE CHANGES IN A COLLEGE POPULATION

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Paper presented at the Annual Meeting of the Eastern Psychological Association, Baltimore, MD, April 16, 1982.

Since the appearance of the Social Readjustment Rating Scale (SRRS) (Holmes & Rahe, 1967), there has been a tremendous growth of research relating the occurrence of stressful life events to untoward sequallae, including physical illnesses and psychiatric/psychological disorders. The publication of the SRRS was in some ways the culmination of a long program of research which began with the work of Cannon (1929) on the relationship of emotional states to physiological arousal.

The first actual research directly studying the effects of stressful events and/or life changes was that carried out in the 1950's by Selye, Hinkle and Wolff. Wolff, Hinkle, and their associates (Wolff, 1950; Hinkle, Conger, & Wolff, 1950; Wolff, Wolf, & Hare, 1950; Hinkle, Christenson, Kane, Ostfeld, Thetford, & Wolff, 1958; Hinkle & Wolff, 1958) engaged in descriptive research with humans on the use of short-term, visceral protective devices to ward off stress from an external source and the deleterious outcome of overuse of such mechanisms.

While these researchers were approaching the problem of stressful events from an epidemiological perspective concerned with humans, Hans Selye (1956) was researching the precise physiological and biochemical reactions of laboratory animals to specific stressors such as immersion in ice water, injection with an impure hormone, and enforced sleeplessness. He came to discover the General Adaptation Syndrome as a consistent cluster of physiological changes which occurred in animals, across species and across many types of stressors.

The research of Hinkle, Wolff, and Selye, while pioneering, was largely general and descriptive. Up until the publication of the SRRS in 1967, there was an absence of the technology to allow quantification of life change events which would allow more precise research into the relationship between life changes and disorders, physical and psychological. The original study (Holmes & Rahe, 1967) had a sample of middle-class, normal subjects rate the amount of readjustment required by each of the Schedule of Recent Experiences events using a ratio scaling technique. This procedure led to the establishment of a standard set of weightings for the events on the SRE in terms of Life Change Units. This new schedule is the SRRS. It is important to note that the researchers, in their attempt to control for the confounding factor of personal preference, took great care to avoid the influence of desirability in the derivation of the Life Change Unit scale.

Other researchers have taken the SRRS and looked at the consistency of the rating of the events across various cultures. Research with Americans, Japanese, Black Americans, Mexican Americans, Danes, Swedes, and others has been summarized by Rahe (1972, 1974), showing rank order correlations between the standard weightings and new weightings in the range from .75 to .98.

Holmes, Rahe, and their colleagues in the U.S. and abroad, have spearheaded research into the relationship between the occurrence of life change events and physical illness (T.S. Holmes & Holmes, 1970; Rahe, 1969, 1972, 1974; Rahe & Arthur, 1968; Rahe, Gunderson, & Arthur, 1970; T.H. Holmes & Masuda, 1974). These investigators

consistently found a very reliable relationship between the occurrence of life changes and the occurrence of physical illness. Other investigators have confirmed the existence of a statistically significant relationship between life change unit scores on the SRRS and various measures of illness behavior, including aid-seeking (Bieliauskas & Webb, 1974), patient status (Dekker & Webb, 1974; Ingham & Miller, 1976; Miller, Ingham, & Davidson, 1976), and complications to an existing condition (Nuckolls, Cassell, & Kaplan, 1972). Thus, the evidence is clear that there exists a statistically significant correlation between life change stress and physical illness.

An extensive revision of the SRRS was undertaken by Paykel and his colleagues (Paykel, Prusoff, & Uhlenhuth, 1971; Paykel & Uhlenhuth, 1972). Paykel's main concern was not the somatic manifestations of stress, but the psychological sequellae of stress and the role stress played in the development of psychological disorders, especially depression. They reasoned that most psychological/psychiatric disturbance is related closely to the level of perceived, subjective distress. Thus, the desirability of a life change event becomes a very important determinant of overt disorder through its close relationship to subjective distress. While desirable events may necessitate drastic changes in the life routine of an individual, undesirable ones usually involve readjustment plus an element of threat - especially to the individual's self-esteem (Paykel, et.al., 1971).

Consequently, Paykel modified some of the items on the SRRS to separate desirable from undesirable in items which could be taken

either way. He reworded or qualified other events as well, leading to a scale of 61 events instead of Rahe's scale of 43. In order to incorporate desirability into the weightings of the events, he had subjects in the study rate the degree of upset which would be produced by each event as follows:

> Below is a list of events that often happen to people. We would like you to think about each event and decide how upsetting it is. Use your own experience and what you know about other people to make your decision. A particular event might be more upsetting to some people than to others. Try to think how upsetting the event would be to the average person. (Paykel, et al., 1971, p. 340)

Despite a modification in the specific method of scaling used, this procedure produced event weightings which were correlated significantly with the SRRS readjustment weightings. The correlation for the 14 items with identical wording to those of the original SRRS was r = .683 (Paykel, et al., 1971).

Paykel and his colleagues, along with George W. Brown and his associates, have conducted extensive research into the relationship between life change event stress and psychiatric/psychological disorders. Numerous studies focusing on the effect on general psychiatric status or mental health of stressful life changes have shown, again, clear evidence for correlation between life changes and psychiatric/psychological symptomatology (Bell, Warheit, & Holzer, 1975; Berkman, 1971; Birley, 1972; Brown, 1972; Brown & Birley, 1968; Brown, Sklair, Harris, & Birley, 1973; Myers, Lindenthal, & Pepper, 1971; Wildman, 1974; Holzer, 1977). Other studies by a variety of researchers have found evidence of a significant positive relationship between life change scores and anxiety, as

measured by various instruments (Lauer, 1974; Dekker & Webb, 1974; Reavley, 1974; Morgan, 1977).

Bieliauskas & Webb (1974) introduced the college-modified form of the SRRS. This instrument is a forty-six item listing of life change events, based on the SRRS, but with the events modified to be more applicable to college students, with readjustment weightings for each event. In their study, the total of life change units for events having occurred within the prior six months was found to be predictive of various forms of aid-seeking behavior.

There have been a number of criticisms of the SRRS and Paykel's counterpart instrument. While many of these have been methodological in nature, some have been more theoretical addressing the issue of individual differences in the perception of the event and how those differences may affect the outcomes. This criticism is often based on two of the earliest studies of life changes by Hinkle and Wolff (Hinkle et al., 1958; Hinkle & Wolff, 1958; Hinkle, 1974). These studies looked at groups of people who had all experienced largely the same, traumatic changes in their lives. Their results indicated that the way an individual perceived and attached meaning to an event was a more accurate predictor of future illness than the nature of the event itself. Those subjects who perceived the events as more challenging, more demanding, and more conflict-laden were those who showed a greater frequency of illness.

Hudgens, Robins, and Delong (1970), in a study of life changes of 80 hospitalized psychiatric patients and 103 relative-informants, found a substantial degree of disagreement on the occurrence of antecedent life change events and on the effect of the events on the

psychiatric disorder. Moorehead (1974) found significant differences between black and white subjects in the perception of events and in the choice of events which would induce the individual to seek counseling. He also reported that perception of the events changed as the Rotter Locus of Control scale scores did.

The specific role of perception has been investigated by Thurlow, Vinokur and Selzer, and Yamamoto and Kinney. Thurlow's (1971) data on the importance of the sick role strongly suggests that a person's perception of an event may be more important in determining the subsequent breakdowns than any other factor. Vinokur and Selzer (1975) demonstrated that the desirability of an event was important in determining the psychological distress resulting from the event and thus the sequellae of the event. Yamamoto and Kinney (1976) report data showing that an individual's own rating of the events is more predictive than standard weightings and that perception is an important component of the individual's idiosyncratic ratings. Caplan (1975), in response to criticisms of the SRRS by Wershow and Reinhart (1974), previews data clearly showing that a person's own ratings of the event are more predictive of future illness episodes than are the standard ratings.

In an attempt to begin to understand how personality factors may influence perception of events, and thus response to events, Manack, Hinrickson, and Ross (1975) studied the relationship between life event occurrence and illness across the dimension of locus of control. The results showed a clear and significant difference between internalizers and externalizers in favor of internalizers except under conditions of extreme stress. One purpose of this

research was to examine specifically the relationship between locus of control and the rating of events.

Another purpose was to examine the relationship between the dimension of responsiveness to threat and ratings. Most theoretical models of stress whether largely based on animal research or human research incorporate a concept of demand as a mediator of stress. This demand characteristic of stressful life events can be seen as presenting a threat to the individual's current mode of functioning and possibly self-esteem. Consequently, the relationship between ratings of the events and scores on the Byrne Repression-Sensitization Scale (1964) was also here studied.

The third personality factor hypothesized here as relevant to life change stress perception was the predominant mode of information processing. This concept as operationalized by Kagan and his associates (Kagan, Krathwohl, Goldberg, Campbell, Schamble, Greenberg, Danish, Resnikoff, Bowes, and Bondy, 1967) in the Learning Strategies Questionnaire was hypothesized to be related to the rating of events with scanners showing lower ratings than focussers.

Specifically, the hypotheses here tested were as follows:

1. There will be a statistically significant correlation of each subject's rating of the 46 events and his/her personal average rating with the score on the Rotter I-E Scale with internalizers showing lower ratings.
2. There will be a statistically significant correlation of each subject's rating of the 46 events and his/her personal average rating with the score on the Byrne Repression-Sensitization Scale with repressors showing lower ratings.

3. There will be a statistically significant correlation of each subject's rating of the 46 events and his/her personal average rating with the score on the Learning Strategies Questionnaire with scanners showing lower ratings.

Method

Subjects

The subjects in the present study were two hundred and seventy-four undergraduate students at a large, southeastern university. They were recruited by self-selection from the "subject pool" of the Psychology Department, of students enrolled in introductory level psychology courses. As seen in Table 1, the subjects were primarily young, single sophomores, whose families showed above-average socio-economic status. However, enough variation exists across age, education level, and socio-economic status to strongly suggest the generalizability of the present findings to other groups of single, university students.

Procedure

The subjects were assembled in a classroom in groups ranging in size from two to seventy-six. After a brief introduction, the investigator handed out to each subject a packet containing an informed consent form, and answer sheet, and the following paper and pencil, self-administering questionnaires:

Table 1

Demographic Characteristics of the Sample

1.	Age:	Range 17-29	Mean 19.43	Median 19.17
2.	Sex:	Male 117	Female 157	
3.	Marital Status:	Single 263	Married 4	Divorced 4
4.	Years of School Completed:	Range 12-16	Mean 13.39	Median 13.27
5.	Duncan Index of SES[a]:	Range 7-96	Mean 62.64	Median 64.00

a Reiss, A.J. Occupations and social status. New York: Free Press, 1961, (pp. 263-275).

1. A brief questionnaire tapping sociodemographic characteristics used to describe the sample.
2. The college-modified Social Readjustment Rating Questionnaire. The subjects were asked to rate each event according to instructions modified from Paykel et al. (1971) to have S's rate the events for themselves rather than an average person on a scale of 0 to 100.
3. The Rotter Internal-External Scale of locus of control of reinforcement. This is a scale of twenty-nine pairs of statements, twenty-three scored and six filler pairs, from which the subject was asked to choose one according to the standard instructions.
4. The Byrne Repression-Sensitization Scale. This is a scale of 127 true-false items taken from the Minnesota Multiphasic Personality Inventory. Subjects were given the standard instructions for the MMPI.
5. The Learning Strategies Questionnaire. This scale is a forty-one item, multiple choice measure. Standard instructions were used.

Data Reduction and Analysis

Following the procedure outlined above, all answer sheets were examined closely for any evidence of obvious response bias. One subject's answer sheet showed obvious response bias with all responses falling in one column on the three personality scales. This was discarded. Another answer sheet was marked with many omissions and, for this reason, was also discarded. This review

left 274 usable answer sheets.

All data were punched onto IBM 80-column cards and verified by professional keypunch personnel. The cards were read into an IBM card-reader and all computations were performed by an Aymdal computer using Statistical Package for Social Sciences programs.

Results

The correlation coefficients of scores on the I-E Scale with the ratings for each event and with the subject's personal average rating of all forty-six events are presented in Table 2. As can be seen, fourteen of the forty-six events show statistically significant correlations with I-E Scale scores. Of the forty-six events, thirty-eight yield negative correlations of ratings with I-E Scale scores which is the hypothesized direction of the relationship. Of the fourteen events which show significant correlations of ratings with I-E Scale scores, all are in the hypothesized direction. The correlation between the personal average rating and the I-E Score was also significant and in the expected direction. Thus, Hypothesis 1 is partially confirmed.

The correlation coefficients of scores on the Repression-Sensitization (R-S) Scale with ratings of each of the forty-six events are also presented in Table 2. It is clear from the table that the ratings of more events correlate significantly with the R-S Scale than with the I-E Scale. In actuality, for twenty-six of the total of forty-six events, the correlation of rating with R-S Scale score was significant and in all these cases the correlation was in the hypothesized direction. For the forty-six events,

only five show negative correlations of rating with R-S Scale score -- forty-one of the correlations go in the expected direction. Again the correlation of personal average rating and the R-S Scale score is significant and in the expected direction. Thus, one can consider Hypothesis 2, like Hypothesis 1, partially confirmed.

Table 2

Correlations of Each of the Events and the Personal Average of all Events with Scores on Each of the Personality Scales

Event	I-E	R-S	LSQ
1. Being fired from work, or expelled from school.	-.069	.052	.102*
2. Death of a close friend.	-.072	.078	.037
3. Minor violations of the law.	-.021	.107*	.103*
4. Brother or sister leaving home.	-.030	.132*	.074
5. Loss of job by one of your parents.	-.031	-.001	.177**
6. Being pregnant and unmarried.	-.037	.049	.026
7. Major change in vocation plans.	-.061	.228***	.071
8. Major change in number of family get-togethers.	.012	.128*	.113*
9. Divorce of parents.	.024	-.022	.088
10. Marital separation of parents.	.056	-.020	.042
11. Acquiring a visible deformity.	-.158**	.145**	.125*
12. Becoming involved with drugs or alcohol.	-.005	.071	.101*
13. Jail sentence of parent for 1 year or more.	-.062	.039	.068
14. Major change in social activities	-.098	.141**	.110*
15. Change in residence.	-.136*	.142**	.117*
16. Fathering an unwed pregnancy.	-.053	-.034	.034
17. Death of a brother or sister.	-.077	.034	.038

Table 2 (continued)

Event		I-E	R-S	LSQ
18.	Change in being accepted by your peers.	-.149**	.162**	.160**
19.	Discovery that you were an adopted child.	-.109*	.210***	.146**
20.	Marriage of a parent to a step-parent.	-.125*	.081	.105*
21.	Birth of a brother or sister.	-.123*	.020	-.002
22.	Your being put in jail or other institution.	-.035	.041	.028
23.	Mother beginning to work.	-.046	.080	.008
24.	Having a physical deformity from birth which is visible to others.	-.102*	.201***	.185**
25.	Death of a parent.	-.063	.056	.114*
26.	Getting married.	-.069	.167**	-.155*
27.	Pregnancy of wife (if married) or yourself (if you are a married woman).	.066	.167**	-.106*
28.	Serious illness requiring hospitalization of a parent.	-.076	.116*	.107*
29.	Jail sentence of a parent for 30 days or less.	-.036	.055	.096
30.	Breaking up with a "steady" boyfriend or girlfriend.	-.191***	.198***	.167**
31.	Major change in parents' financial status.	-.081	.180**	.100*
32.	Pregnancy in unwed teenage sister.	.004	.021	.020
33.	Moving to a new college or university.	-.134*	.211***	.112*
34.	Increase in number of arguments with parents.	-.064	.229***	.081

Table 2 (continued)

Event		I-E	R-S	LSQ
35.	Increase in number of arguments between parents.	-.056	.122*	.081
36.	Death of a grandparent.	.026	-.030	.107*
37.	Outstanding personal achievement.	-.021	.180**	-.038
38.	Sexual problems or difficulties.	-.148**	.132*	.048
39.	Serious illness requiring hospitalization of a brother or sister.	-.109*	.077	.058
40.	Change in father's occupation requiring increased absence from home.	.037	.030	.092
41.	Major change in your church activities.	.010	.109*	.079
42.	Addition of a third adult to your family.	-.124*	.176**	.094
43.	Decrease in number of arguments with parents.	-.112*	.199***	-.014
44.	Decrease in number of arguments between parents.	-.043	.178**	-.013
45.	Failure of a course in school.	-.122*	.264***	.187***
46.	Starting to work at a new job.	-.084	.281***	.064
Personal average of above events.		-.141**	.266***	.163**

*p < .05 **p < .01 ***p < .001

The correlation coefficients of scores on the Learning Strategies Questionnaire with the ratings of each of the forty-six events and with the personal average rating for all forty-six are presented in Table 2. Examination of the table shows that twenty-one of the events show ratings which correlate significantly with LSQ scores. Nineteen of these correlations and the personal average rating correlation are positive and two are negative. The positive correlations show an association between focusing as a predominant cognitive mode and high ratings whereas negative correlations show an association between scanning and high ratings. The two negative are two of six negative correlations in the whole group of forty-six events. The analysis of the correlation, thus, shows a partial confirmation of Hypothesis 3.

Discussion

The relationship between the ratings of the events and locus of control of reinforcement is a real but not a useful one. While fourteen of the events and the personal average ratings correlate significantly and in the hypothesized direction, the I-E Scale score accounts for only 2% of the variance in personal average rating.

In light of the findings of Manack et al. (1975) of the significant difference between subjects showing internal locus of control in their response to life changes, it appears that perception of the event cannot wholly account for this difference. It is likely that perception of the event, as influenced in some events by locus of control, influences to a certain extent the

response to the event. In addition, though, it is likely that locus of control may influence the response of an individual to certain events, the ratings of which show no influence from locus of control. Explication and illustration of how locus of control affects the overall process of stress awaits further research.

The relationship between event-ratings and the response-to-threat construct of repression-sensitization again is only partially upheld. Slightly more than half of the events are given ratings which correlate significantly with R-S Scale scores. The R-S Scale scores, despite correlating significantly, can account for only 7% of the variance in personal average rating for the subjects.

These findings would tend to support arguments of Paykel et al. (1971), who argued for the inclusion of desirability into the ratings of life change events because of the element of threat implied by undesirable events. The findings are consistent with those of Byrne, Golightly, and Shelfield (1965), who found repressors to be judged consistently, considerably more well-adjusted in the eyes of others. This holds over in repressors rating the events to be less upsetting than sensitizers. However, whether this relationship is maintained across response to the event to the point of the usual dependent measures of physical illness or symptoms and psychological distress or disorder, is a matter which requires further investigation.

The confirmation of the hypothesized relationship between mode of information processing and perception and rating of life change events adds a new dimension to the consideration of the experience of stress. It appears that choosing to process infor-

mation by integrating details into a unitary picture in some way reduces the perceived stressfulness of certain life change events. The mechanism of this action is not known but could involve a perceived reduction in the number of sub-events which might offset the increase in the severity of the event resulting from event consolidation.

The findings of this study appear to support all the theoretical models of life change stress in the confirmation of certain personality traits as influential in the perception of life change events. The researches of Thurlow (1971), Vinokur and Selzer (1975), Yamamota and Kinney (1976), and others cited in Caplan (1975), assert the importance of an individual's perception of and attachment of meaning to the life change event in determining the outcome reaction to it. In the theoretical models of Dohrenwend (1961), Howard and Scott (1965), Coleman (1973), and Rahe, Floistad, Bergan, Ringdahl, Gerhandt, Gunderson and Anderson (1974) there are various terms used for constructs which essentially involve individual perception of and attachment of meaning to the event in the production of stress. This study, by confirming systematic differences in individual perception and rating of life change events, has added support to the perception process as an important step in the overall reaction to any stressor.

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